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"THIS IS THE WAY WE GO TO SCHOOL" IN CHINA

China is changing fast. Many men have cut off their queues and in the large cities thousands are putting on American dress. Schools that were once only for boys are often now for girls, too. By the expression on their faces these Chinese girls do not seem to mind studying, not even their own difficult picture language (See Bulletin No. 5).

HOW TEACHERS MAY OBTAIN THE BULLETINS

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Harbin, Manchurian City Which Railroads Built

RENEWED military activity in northern Manchuria early in February, when Japanese forces closed in on Harbin from the south and the northwest, resulted in the loss of the last large Manchurian city in Chinese hands.

Harbin is almost as Russian as it is Chinese, although the city lies in north-central Manchuria about 200 miles from the nearest border line of Siberia. It lies in the "Russian sphere of influence" in Manchuria, so called because there are the headquarters of the Chinese Eastern Railway, jointly controlled by China and Soviet Russia.

Important Railhead and Junction

Russians really put Harbin on the map. Up to the latter part of the "nineties," the site of Harbin was a wild, desolate region. A few fishermen's huts marked the only human habitation. Then, in 1896, the Russian builders of the Trans-Siberian Railroad, bent upon reaching Vladivostok, sought to cross Manchuria rather than to build a much longer line entirely in Russian territory. A treaty between China and Russia made the short line through Harbin possible.

Harbin was really born when Chinese railroad interests saw the feasibility of a line running southward from the Russian railroad. The site of Harbin was chosen as the junction point. Passengers from Europe may travel by rail across Siberia and northern Manchuria in express trains to Harbin; thence to Mukden, the great Manchurian market-place; and from there, in normal times, over any of three routes to important cities of the Orient. One line leads to Tientsin and Peiping, another to Dairen and Port Arthur, where passenger boats sail for southern China ports; another line bisects the Korean peninsula with one of its termini at Fusan, where a boat ride across Chosen Strait will put the traveler into Japan proper.

Some Aspects of Boom Town

Born of the railroads, Harbin has also been reared by the railroads. Before the World War a railroad-employed telephone operator handled all telephone calls; the railroads built and maintained hospitals and schools, and even built the city's churches. In recent years, however, a portion of the municipal administration has been placed in the hands of the populace.

After only three decades, Harbin boasts a population of more than 250,000. Some streets in the old portion of the city resemble those of American boom towns with their bordering one-story shops. The gay-colored signs in Chinese and Russian attract the traveler's eye; but carts, droskies and loaded donkeys, mired in the hub-deep mud, occupy the attention of pedestrians and shopkeepers most of the time.

The railroad divides the so-called New Town from the Wharf District. On the New Town side, the traveler alights from a train at a station that many cities of America with more than Harbin's population would be proud to possess. There are some fine streets in the New Town district; on them are large, modern government buildings as well as structures that appear to have been erected when Harbin was much younger.

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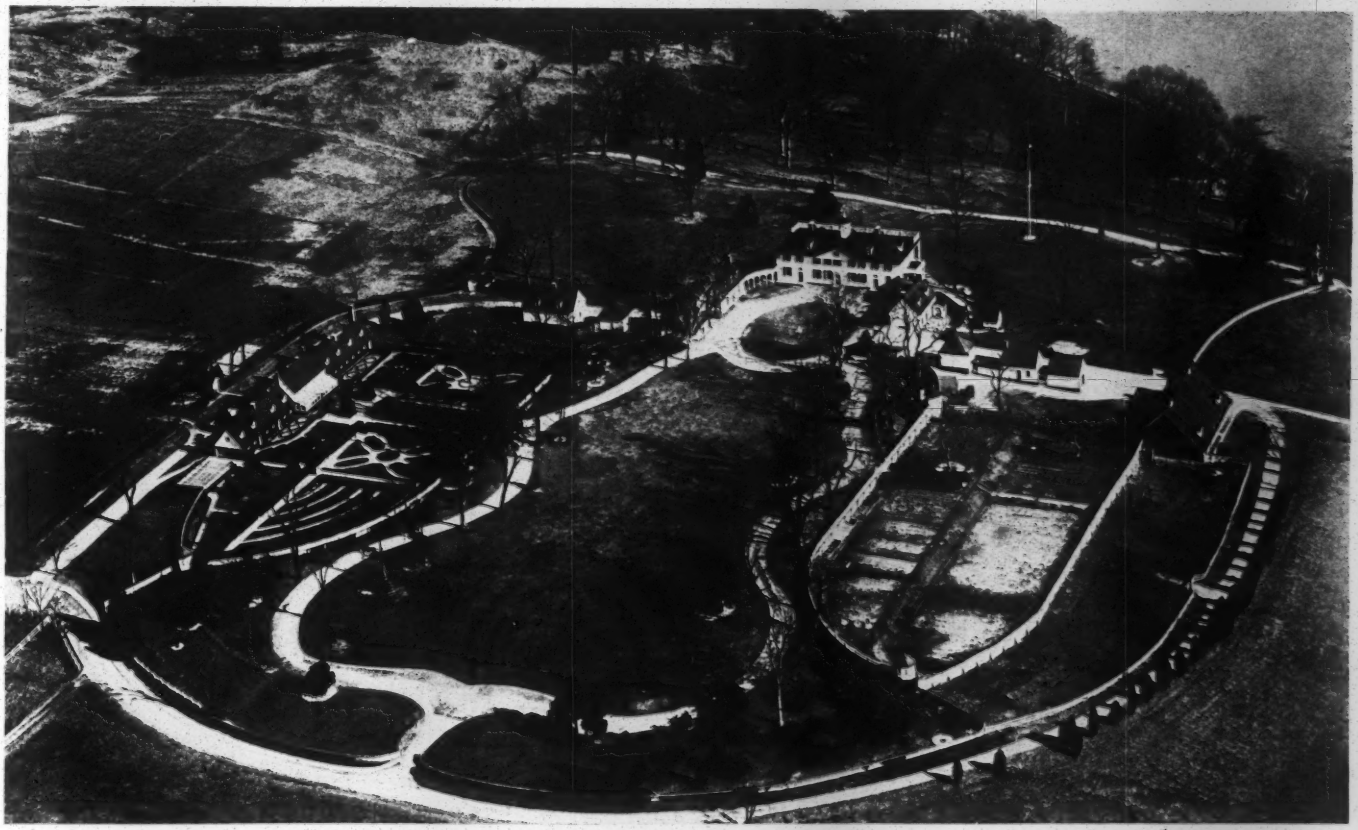

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AS THE AIRMAIL PILOT SEES MOUNT VERNON, GEORGE WASHINGTON'S HOME

In the foreground is the entrance to the serpentine drive, which winds its sinuous way to the door of the mansion. On each side of the great house are kitchens and supply houses, while at the upper right is the tiny summer house, and beyond the Potomac. Formal gardens and servants' quarters are at the left. Like a black pencil line, upper left, runs the low boundary of the garden, known as the ha-ha wall (See Bulletin No. 3).

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"One-Way" Glass, Latest Development of Industry 5,000 Years Old

"ONE-WAY" glass, the latest development of an industry which dates back 5,000 years, should be the ideal building material for the person who wishes to live in a glass house. "One-way" glass is a type of window pane through which one may see without being seen.

Nature was the first glass manufacturer when she distributed crystal throughout the earth. Man learned the trick of making glass 5,000 years ago, and has steadily improved his methods, and the quality and quantity of his output ever since.

Six-Foot Glass Fence Around the U. S.

Every decade the "glass census" shows development in the industry. If the bottles made in the United States annually each averaged eight inches in height and were placed end to end, they would girdle the globe nearly twenty-five times. Plate glass made in the United States each year would pave a road 18 feet wide from Boston, Massachusetts, to New Orleans, Louisiana. A year's output of our window glass factories would make a six-foot fence around continental United States, excluding Alaska.

If all the tumblers and goblets manufactured annually within our borders were evenly distributed, each person would own nearly a dozen. A year's domestic production of milk bottles would allow three for each inhabitant, while every man, woman and child, sharing equally in a year's output of preserving or packing jars, would possess about fifteen. More than one billion, eight hundred million medicine bottles are demanded annually by our pains and aches.

Before the advent of gas and electricity, the lamp chimney was a principa' product of glass factories. Now electric bulbs manufactured in the United States each year, if placed end to end, would stretch across the United States from the Atlantic to the Pacific. One modern electric light bulb machine can turn out 60,000 bulbs a day.

The "glass sandwich" is one of the recent developments in the glass industry—the so-called nonshatterable glass which consists of two plates of glass with a layer of transparent material between. Make the sandwich a "club sandwich" with several layers of glass and transparent "meat" and you have bullet-proof glass.

Modern machinery can spin glass so that it resembles silvery silk threads. Two of the largest passenger ships use glass thread fabric for insulation material.

Virginia Had First American Glass Factory

Phoenicians are reputed to have come upon glass making when the crew of a Phoenician vessel landed on a Palestine river bank to prepare food. No rocks were available, so the seamen used lumps of soda from their cargo to support their cooking utensils. The heat of the fire fused the beach sand and soda, forming a transparent mass.

Pieces of glass found in Egypt, Greece and in the regions of the Old Roman Empire indicate that glass goblets and jars were popular long before the Christian era. For many years Venice and a near-by island were the sources of the famous Venetian glass, perhaps the first delicate, thin glass manufactured.

England did not become seriously interested in the glass industry until medieval times, but before the Pilgrims dropped anchor off Plymouth, the settlers at Jamestown, Virginia, had seen one glass plant fail and a second one operating.

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Automobiles Gaining in Popularity

The drosky with its horses framed in bell-hung arches is still popular in Harbin, but the taxicab and private automobile are available at the railroad station and at the hotels.

When a passenger alights from the train in this Chinese town, he is likely to hear more Russian than Chinese. Most of the Harbin hotels whose representatives besiege the traveler at the station are Russian or Japanese owned. Unless the English-speaking traveler can speak Russian, Chinese, Japanese, or a little French or German, he has difficulty in making his wishes known.

The Wharf District across the railroad from the New Town and bordering the Sungari River is Harbin's business section. Here the traveler gets a glimpse of the bustling commercial life of the city, for Harbin has become a great market through which commercial traffic between Siberia and China flows unceasingly.

The river front, when yellow soy beans are being shipped, is a mass of small sailing vessels, filled to the gunwales with huge sacks. Beans from these boats are destined for local and foreign consumers. Most interesting of the agricultural products seen in Harbin by the foreign traveler, however, are the Chinese cabbages which resemble huge stalks of celery.

Note: For additional material and illustrations of Manchuria see: "Byroads and Backwoods of Manchuria," *National Geographic Magazine*, January, 1932; and "Manchuria, Promised Land of Asia," October, 1929. See also: "Manchuria: Transformed by Railways," GEOGRAPHIC NEWS BULLETINS, week of October 12, 1931; "Sungari River, Busy Manchurian Trade Route," November 2, 1931; "Tsitsihar, Walled Capital of Manchuria's Largest Province," December 7, 1931; and "Chinchowfu, Temporary Chinese 'Capital' of Manchuria," December 14, 1931.

Bulletin No. 1, February 22, 1932.

© Photograph courtesy South Manchuria Railway

KUNGCHULING, A STATION ON THE MAIN-LINE TO HARBIN

Harbin, the last important Chinese city in Manchuria to fall into Japanese hands, is the meeting point of the east-west line between Moscow and Vladivostok, and the north-south line from Changchun and Dairen. Another railroad extends northward from Harbin to Hailun. Kungchuling, a busy grain market and site of an agricultural experiment station, is about halfway between Mukden and Harbin.

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New York City To Reproduce Mount Vernon

AS PART of the celebration of the George Washington Bicentennial the city of New York is planning to erect, somewhere in the metropolitan district, a reproduction of Mount Vernon, similar to that at the French International Colonial Exposition last year and also to that at the San Francisco Exposition.

Mount Vernon, the home of the first President and the object of pilgrimage of 500,000 people annually, is described in a special communication to the National Geographic Society by Worth E. Shoults.

Great Estate Once Sold for $900

"The broad expanse of the Potomac, the wooded beauty of the Maryland shore beyond, and the combined charms of the great trees, spacious lawns, and flowering gardens of the estate remain to-day much as they were when Washington lived at Mount Vernon," Mr. Shoults says.

"The first white proprietors of this superbly located plot of land were two old prospectors, who by authority of the Royal Governor patented it nearly 300 years ago. They made no effort, however, to comply with the provisions of the law which required them to place tenants on the property, and in consequence their title to 4,000 acres reverted to the Commonwealth.

"In 1674 the patent to the land, along with some additional acreage, was reissued by Lord Culpeper to John Washington and Nicholas Spencer. Three Washingtons held the land before it came into the possession of Augustine, father of Lawrence and George, who purchased it from his sister for $900 and built the first house on it about 1734. This small dwelling was burned five years later, and its owner moved with his family to a farm near Fredericksburg, where he died in 1743.

"Under the provisions of his will, the estate on the Potomac passed to Augustine's son Lawrence, who made his residence there and gave the place its name in honor of Admiral Vernon, of the British Navy, under whom he had campaigned against the Spaniards in the West Indies and for whom he entertained a deep respect and affection.

"Uncertainty shrouds the origin of the present mansion. Certain of the records indicate that Lawrence Washington began its construction, while others seem to show that his father built it. In 1747 George Washington came to Mount Vernon to make his permanent home with his high-minded and cultured half-brother.

"During Lawrence Washington's mastership, Mount Vernon began to assume a position of some importance in the Colony. Lawrence Washington died in 1752 and left Mount Vernon to his infant daughter, Sarah, who survived her father by only a few months. On her death the property went to George.

George Washington Added Portico

"The Mount Vernon of 1752 and that of to-day, which is essentially as George Washington left it, were not much alike. The house was a simple one, without the present mansion's third story, banquet hall, library, or the chambers above these additions. Neither did it have the colonnades or the great portico.

"When Mount Vernon became the property of the Ladies' Association in 1859, it was almost devoid of furnishings, and the task of reassembling the original pieces has been a stupendous one. Under the terms of Mrs. Washington's will they were so distributed that the ensuing century saw them scattered all over the Union.

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A successful plant in America was operated by the Dutch on Manhattan Island from 1645 to the middle of the following century. Eleven years after the forty-niners reached California, that State had a glass factory.

From humble beginnings glass stepped into the studios of the famous artists of medieval Europe. Engravers, painters, mapmakers and etchers displayed their talent on glass, while other artists busied themselves discovering methods of tinting glass. Metallic oxides and other metallic elements are glass coloring agents. Copper produces red and black glass; cobalt, blue; manganese, pink; chromium, green. Gold is one of the ingredients of ruby-colored glass.

Glass makers shaped glass articles by "lung power" until the early part of this century and, while some fancy bottles still are blown by human breath, machinery has all but relegated the glass blower to pages of industrial history. Now modern bottle-making machines, unattended except by the occasional visit of an inspector, turn out 165 bottles a minute.

Ingredients of ordinary glass—sand, salt, limestone and lead—are found in the United States in large quantities. Glass sand is abundant in Pennsylvania, Illinois and West Virginia. Pittsburgh is America's glass capital.

Note: Brief references to glass, glass sands, and glass making will be found in "Illinois, Crossroads of the Continent," *National Geographic Magazine*, May, 1931; and "Pennsylvania, Industrial Titan of America," May, 1919.

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GLASS-BLOWING AT A PENNSYLVANIA PLANT

In this picture are shown most of the operations of blowing glass by hand methods. The first man on the left of the picture is the "blower." The glass has been gathered on the end of the blowpipe for him, and he is shaping it. The next workman is cooling the shaped ball. More glass is then gathered on the ball, and the third workman is enlarging it. The fourth workman is the final blower. Standing on the "blower's block," he blows the glass until it assumes the shape of the mold inside the block.

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Fontainebleau—Château, Town and Forest

THE American Schools of Music and Fine Arts in the Belle Cheminée wing of historic Fontainebleau Château, near Paris, have recently received, as a gift from the town of Fontainebleau, the free use of a tract of land in the center of the town for a dormitory.

Although the school, developed after the war as an overture of friendship on the part of the French Government toward the United States, admits American students only, the administration (in France) and the faculty are French. The French Government, which maintains the château as a public monument, has also contributed 600,000 francs toward the new dormitory building for this American culture center abroad.

Château Began as a Hunting Lodge

In addition to the château and the town of Fontainebleau—the latter also famous as the present residence of the Spanish royal family—there is still a third Fontainebleau, the best known forest in France, in the heart of which lies the château and town. It is in a hotel near the edge of town that the exiled Spanish monarchs live.

Fontainebleau town lies about thirty-five miles southeast of Paris. Hemmed in on all sides by the forest, it is a delightfully quiet little place of some 16,000 residents. The streets are broad and spotlessly clean, and most of the houses are small. Scattered among these unpretentious structures are a number of large hotels which care for the thousands of visitors, many of them Americans, who flock to Fontainebleau during the summer months.

The magnet that draws most travelers to Fontainebleau is the great château or palace that has given its name to town and forest. The magnificent structure began its existence in the twelfth century as a hunting lodge, a rather somber feudal tower. In the sixteenth century Francis I had built on to and around the old lodge a handsome château. Later kings made additions, until the structure reached completion under Louis XIII about 1625.

Palace Has Seen Romance and Tragedy

Inside the walls cluster memories of the romance and tragedy that have clung around France's kings. The gay court life of the kings named Louis blossomed there, as well as the almost equally carefree but less-known court life of Francis I and Henri II, who came before. There the first Napoleon lived with Josephine—and Marie Louise. There Josephine was divorced. In one of the palace chambers Napoleon high-handedly kept prisoner Pope Pius VII.

The most dramatic incident that the walls of Fontainebleau witnessed took place on April 20, 1814, when Napoleon, after he had signed his abdication as emperor and on the eve of departing for Elba, had his famous guard of veterans drawn up in the great court and took formal leave of them. Since then this courtyard has been known as the "Cour des Adieux."

Fontainebleau fell upon evil days during the French Revolution, and during Napoleon's wars was used as a barracks for prisoners. When Napoleon became emperor he spent ten million francs restoring and refurnishing the palace, and it became his favorite residence. Both Louis Philippe and Napoleon III resided at Fontainebleau in the nineteenth century. Since the rise of the Third Republic in 1871 the palace has been a public building, a government museum of Renais-

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"In one respect only has modernity been tolerated: the Ladies' Association has provided the most up-to-date equipment obtainable to safeguard the buildings and their precious contents from the hazards of fire. It is doubtful if any frame building in the world has a better fire-protection system.

"Every condition which might contribute accidentally to a conflagration has been eliminated. There are no fires about the mansion or its adjacent buildings, the whole unit being heated by hot water radiation from a subterranean boiler room located 400 feet away. All lighting of the buildings is by a most carefully protected system, which was especially designed by Mr. Thomas A. Edison and installed under his direction. In the mansion itself there is no wiring whatever, and when it is necessary to light it, storage battery lamps are used."

Note: Washington's Birthday is an appropriate time to refresh one's memory of the life and times of the First President. See "The Travels of George Washington," *National Geographic Magazine*, January, 1932; "Virginia, a Commonwealth That Has Come Back," April, 1929; and "The Home of the First Farmer in America," May, 1928. For the city of New York see: "This Giant That Is New York," November, 1930.

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ST. HELENA WILLOWS FRAME THE POTOMAC APPROACH TO MOUNT VERNON

These beautiful trees, planted as bulwarks against seepage and the tides of the Potomac, were slipped in direct line from a willow that once grew by the grave of Napoleon on the lonely island of St. Helena. During the spring and summer months a side-wheel steamer leaves Washington twice daily for Mount Vernon. This year America's most famous shrine is linked with the nation's capital by a new superhighway (See *Geographic News Bulletins*, January 11, 1932).

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How the Chinese Eat, Work, Travel, Worship and Play

"WHAT do the Chinese eat? How do they live? What is their religion? How do they travel and transport their goods? What are some of the strange and exotic products of this land on the other side of the earth?"

These and scores of other questions are coming up daily in thousands of schools and colleges as the attention of the entire world is shifted to the East.

Bamboo Is Essential to the Chinese

In one sense the Chinese civilization might be said to be a civilization built on bamboo. Chinese coming to this country for the first time are as astonished to learn that we have no bamboo—except for fishing poles or for walking sticks—as we are to learn that the Chinese away from the sea and river ports make very little use of metals.

Throughout a large part of China groves of bamboo grow like trees near the homes of the people. They eat the tender tips of bamboo as we eat asparagus, and use bamboo chopsticks to eat their food. They carry rice in bamboo baskets and sweep the floor with bamboo brooms. They learn to write on bamboo paper with bamboo pens. Houses are made with bamboo poles at the corners, woven bamboo walls and roofs. Shoes and hats are made of the same light, strong material.

Not all Chinese are rice eaters. This is a mistaken impression which gained currency because the first European ships to visit China put in at southern ports, in the rice-raising lands. Millions of Chinese, particularly those in North China and Manchuria, never see rice, but depend on the soy bean and wheat for food. But it is true that many more millions eat rice than any other kind of food. Rice grows in very wet land, land that is generally covered with shallow water at ploughing and planting time. Each tiny rice seed is grown in a seed bed until it is about eight inches high. Then the tender shoot is transplanted in even rows in the wet fields, back-breaking work, for which the planters receive only a few cents.

Outdoor Restaurants Colorful

One of the most interesting sights to be seen on the streets of Chinese cities is an outdoor restaurant. On a wooden bench the restaurateur places a small charcoal stove, a wooden bowl full of noodles and bean curds, chopsticks, a frying pan full of bean sprouts, and little dishes holding spices, red pepper, bean oil and syrup. Then he waits for customers. For a fraction of a cent the passerby may obtain a quick lunch. The noodles or bean curds may be dipped in as many of the dishes of spice or syrup as he likes, or the patron may put them into a tiny bowl and pour sauces over them.

When the Chinese use chopsticks they grasp both sticks in one hand. One is held perfectly still and the other moves back and forth. The Chinese will tell you that he uses his chopsticks just as he uses his jaws—one still and one moving!

Although the Chinese have many temples in honor of great warriors—particularly those who have protected them—the common people love peace and dislike war. They have a proverb which says "Right makes might." Great men in China are often honored after death by having temples built for them. In the temples food and gifts are placed from time to time. A son in China, after the death of his parents, always places a tablet in the house in their honor. That is one reason why the Chinese are so glad when a boy baby is born, for then they will have someone to honor them after death.

Bulletin No. 5, February 22, 1932.

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sance architecture and of the furniture of Louis XIV, Louis XV, and the Empire.

The palace, with its numerous galleries and pavilions, covers a vast area and incloses seven courts. The architecture is marked by high-roofed gables, which, with the many windows, give the structure an appearance of lightness.

The Forest of Fontainebleau covers 42,000 acres and is thus slightly larger than the District of Columbia. Through it extends a framework of highways and lesser roads, and between these a close-meshed network of paths. The American observer is struck by the neatness of the forest and its freedom from underbrush in large areas. The forest seems trimmed and combed.

Throughout the forest great ribs of sandstone are ever protruding, adding to the picturesqueness of the views. The tree growth is not dense, and because of the freedom from lower growth one may see far down alleys of trees, with sunlight striking through to gild ground and tree-trunks. Many of Millet's woodland pictures and some of those of Corot were painted among these trees. Millet lived in Barbizon, on the edge of the forest.

Fontainebleau Forest was a royal hunting preserve. Through it has galloped in chase of the stag and boar almost every French king from Saint Louis to Louis Philippe. Crosses still stand to mark the meeting places for royal hunting parties. A few stags and boars yet manage to live in the forest, but highways, paths, and even railways, chugging automobiles, bicyclists, and crowds of tramping tourists have reduced almost to the vanishing point the fastnesses that can harbor the wild life of the ground. Birds can thrive under such conditions, and the famous forest is a paradise for feathered creatures.

Note: Beauty spots surrounding Paris are described and illustrated in the following articles in the *National Geographic Magazine*: "The Palace of Versailles, Its Park and the Trianons," January, 1925; "Through the Back Doors of France," July, 1923; and "Scenes from France," July, 1921. For two color photographs of the Forest of Fontainebleau see color plate XV in "Flashes of Color Throughout France," November, 1924.

Bulletin No. 4, February 22, 1932.

© *Photograph by Charles H. Kraqh*

A SCROLL AND PICTURE SHOP OF SHANGHAI

The Chinese venerate learning, and the walls of their living rooms and studies are often covered with scrolls upon which have been written excerpts from their classics. Such scrolls and water-color paintings are sold at street shops where, in some instances, the proprietors cannot read (See Bulletin No. 5).

A Pictorial Survey of Life in China

The preceding references about life in China are taken at random from "Life in China," in the series of six Pictorial Geography sets which the National Geographic Society is making available to schools at a price below the cost of the sets, as another of The Society's contributions to teaching geography. In addition to material about China these loose-leaf collections of The Society's photographs include: Eskimo Life, Sahara Life; Indians of America; African Negro; Hill Tribes of the Philippines; Land, Water and Air; the United States; and Italy.

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EACH STUDENT FINDS A NEW STORY TO TELL

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